


Plant Hazard Identification Risk Assessment and Control (HIRAC)

PLANT INFORMATION							
Plant item:	Ammann ASC110D	Plant identification details (asset/plant no.):					
		ROPS Serial Number:					
		Machine Serial Number:		2823998			
Competency / licences etc. required to operate the plant:	National Certificate of Competency	Operator Training		Assessment of competency			
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
<p>Attention: This hazard identification and risk assessment has been developed by Ammann Pty Ltd with reference to the hazards and risks associated with the item of plant only. Procedural controls referenced within this document are based on Manufactures maintenance and operation procedures. Where this item of plant is hired or sold it is the responsibility of the PCBU with management or control of the plant to assess how the nature of hazards and risks associated with the operating environment impact on the content of this document.</p>							
							
<p>Plant Noise Levels - Noise level testing completed at 100% throttle while plant is stationary. Noise testing completed in compliance with AS2012/1 and AS2012/2.</p>							
OEM testing and certification	Conplant noise level testing		Noise Advice: Operator	Noise Advice: Bystander	Plant Dimensions and Specifications		
<input type="checkbox"/>	<input checked="" type="checkbox"/>		<p style="font-size: 24pt; margin: 0;">BELOW</p> <p style="font-size: 24pt; margin: 0;">85dB(A) Hearing protection not required by operator for short durations (less than 8 hours)</p>	<p style="font-size: 24pt; margin: 0;">OVER</p> <p style="font-size: 24pt; margin: 0;">85dB(a) Hearing protectors required by all persons within 5m while plant is in operation</p>			Height mm
Reading at operators station	77 dB(A)				Width mm	2258	
Reading for bystanders taken:	1200	mm above ground			Length mm	5900	
	7000	mm from plant			Operating Weight (Maximum)	15750	
Left	83	dB(A)			Right	84	dB(A)
Front	76	dB(A)	Rear	85	dB(A)		

Risk Assessment Team			
Name	Position	Signature	Date
Rohan Anderson	Sales & Dealer Manager – Australia / New Zealand / Pacific		3/8/16
Dary Samadi	National Manager - Service, Technical Support and Training - Conplant		3/8/16
Paul Vandersluis	Managing Director AAU		3/8/16
Authorised by:			
Name	Position	Signature	Date
Rev0	Rohan Anderson		3/8/16
Rev1			
Rev 2			

MAINTENANCE & REPAIR ASSESSMENT (Complete this section for assessment of Maintenance and repair activities only – inspection and casual access by the operator to included in operational assessment)					
Maintenance/repair being assessed:	General service/scheduled service/break-down service				
No. of employees working on (or likely to be working on) plant:	1-2 Service Field Technicians/Mechanics		Estimate of duration of activity:	< 8 hours	
Type of activity:	Scheduled frequency.	By Whom	Location of maintenance:		
<input checked="" type="checkbox"/> Scheduled Daily Logbooks must be completed prior to commencing operations checking items as described in the logbook and operators manual. All faults must be noted and machine must not be operated until plant has been repaired or assessed as safe by a competent person. Competent Person may be any of the following. <ul style="list-style-type: none"> • Owner Field Service Technician • Owner Plant Mechanic 	Daily (pre-start inspection)	Operator	Customer Site	<input checked="" type="checkbox"/>	Owner Workshop <input type="checkbox"/>
	Pre-hire General Service	Plant Mechanic	Customer Site	<input checked="" type="checkbox"/>	Owner Workshop <input checked="" type="checkbox"/>
	250 hours of operation	Plant Mechanic	Customer Site	<input checked="" type="checkbox"/>	Owner Workshop <input checked="" type="checkbox"/>
	500 hours of operation	Plant Mechanic	Customer Site	<input checked="" type="checkbox"/>	Owner Workshop <input checked="" type="checkbox"/>
	Major Service (1000 hour intervals)	Plant Mechanic	Customer Site	<input checked="" type="checkbox"/>	Owner Workshop <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Unscheduled.	When and If Repairs required	Field Service Technician	Customer Site	<input checked="" type="checkbox"/>	Owner Workshop <input checked="" type="checkbox"/>
Competency requirements for maintenance: (e.g. electrical, welding, etc)	All Inspections, maintenance and repairs shall be carried out by a competent person. No repairs are to be attempted without authorisation from Owner.				
References (Australian Standards, maintenance manuals etc):	Maintenance Manuals, Maintenance/service records and Plant Operations manual.				
Isolation of energy sources:	Hydraulic system	Main battery isolator	Electrical systems	Main battery isolator	
	Engine isolation	Main battery isolator	Control systems	Main battery isolator	

HAZARDOUS CHEMICALS Complete this section for assessment of fluids and other chemicals either stored within the plant systems or used within the process that the plant is completing. Do not include chemicals from other ancillary processes (eg, truck wash, water dispersant)

Chemical Name:	Use/Purpose <i>(what does this chemical do, eg - fuel, hydraulic fluid, lubricant etc)</i>	Risk Phrases <i>(as per MSDS)</i>	Exposure risk <i>(when does this risk exist?)</i>			PPE Required	MSDS Attached
			Operation	Maintenance	Failure		
Fuchs Titan Ultralube 1540	Engine Oil	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chemical resistant gloves, eye protection, long sleeve/pant	<input type="checkbox"/>
Fuchs Titan HDD Premix Coolant	Coolant	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chemical resistant gloves, eye protection, long sleeve/pant	<input type="checkbox"/>
Fuchs Titan Gear Hyp LD 8090	Gear Oil	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chemical resistant gloves, eye protection, long sleeve/pant	<input type="checkbox"/>
Fuchs Titan Gear Syn 80140	Gear Oil	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chemical resistant gloves, eye protection, long sleeve/pant	<input type="checkbox"/>
Fuchs HVI68	Hydraulic Oil	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chemical resistant gloves, eye protection, long sleeve/pant	<input type="checkbox"/>
Renolit LXM02 Grease	Grease	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chemical resistant gloves, eye protection, long sleeve/pant	<input type="checkbox"/>
Fire Extinguisher – Pyrochem Dry Chemical	Extinguishing agent	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Eye protection, gloves	<input type="checkbox"/>

RISK ASSESSMENT	
Evaluate the risks associated with operating, refuelling, maintaining and working around the item of plant.	
List the potential hazard, does it need controls, what controls are needed, consider the hierarchy of control and score the consequence and the likelihood.	
Refer to Appendix 1 for Consequence (C), Likelihood (L) and Risk Rating (R) descriptions.	
Section 1 Put an X if the hazard does apply to the plant. Leave blank if the hazard does not apply to the plant.	Section 4 Write the existing Controls and relevant Comments relating to additional controls required
Section 2 Indicate when the exposure is likely to occur. Mark all that apply with an X	Section 5 Indicate who is responsible for applying or using the controls.
Section 3 Then indicate the Impact (I) , Likelihood (L) and Risk Rating (R)	Section 6 Indicate the residual risk taking into account controls being implemented after considering applicable legislation, Codes, Standards, etc.

SECTION 1 Hazard category and examples	SECTION 2 When does this hazard exist?	Section 3 Initial Risk			SECTION 4 Controls and Comments	Section 5 Responsibilities		Section 6 Residual Risk		
		I	L	R		Who	When	I	L	R
Entanglement - Yes No										
Can anyone's hair, clothing, gloves, necktie, jewellery, rags and other materials become entangled with moving parts of plant, or materials in motion?										
<input checked="" type="checkbox"/> Arms, hands, fingers, or upper body <input type="checkbox"/> Legs, feet, or lower body <input checked="" type="checkbox"/> Hair, clothing, or jewellery	<input type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	C	H	Plant/Engineering/Signage Controls <ul style="list-style-type: none"> Emergency Stop Lockable battery isolator All belts and pulleys enclosed in engine bay Fixed guarding Signage on outside of fixed/moveable guards 	Maintenance Personnel/ Operators	During operation and maintenance	3	E	M
					Procedural Controls <ul style="list-style-type: none"> Lock out for maintenance Ensure all guards are securely fitted Daily prestart checks Operator competency/training Correct PPE to be worn at all times Clothing to be buttoned up and tucked in - no loose articles Ensure all guards and covers in place when operating machine Ensure hands kept away from moving parts 	Maintenance Personnel/ Operators	During operation and maintenance			

SECTION 1 Hazard category and examples	SECTION 2 When does this hazard exist?	Section 3 Initial Risk			SECTION 4 Controls and Comments	Section 5 Responsibilities		Section 6 Residual Risk		
		I	L	R		Who	When	I	L	R
					Transport/Loading/Unloading Controls					
Additional Plant Controls required (including hierarchy of controls):										
Crushing/Striking - Yes No Can anyone be crushed due to falling, uncontrolled or unexpected movement of plant or its load, lack of capacity to slow, stop or immobilise the plant, tipping or rolling over, parts of plant collapsing, contact with moving parts during testing, inspection, maintenance, cleaning or repair, thrown off, under or trapped between plant and materials or fixed structures?										
<input checked="" type="checkbox"/> Plant tipping or rolling over <input type="checkbox"/> Materials falling or being ejected from working area. <input checked="" type="checkbox"/> Unexpected movement of plant, load or material <input checked="" type="checkbox"/> Inability to slow, stop or immobilise plant <input type="checkbox"/> In-running rollers/gear sets <input checked="" type="checkbox"/> Unexpected start up or movement <input checked="" type="checkbox"/> Between plant and materials or fixed structures <input type="checkbox"/> Falling objects created by the plant <input type="checkbox"/> Load falling/moving due to power loss or plant failure <input type="checkbox"/> Other (please specify)	<input checked="" type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input checked="" type="checkbox"/> Work around moving plant <input checked="" type="checkbox"/> During Loading/Unloading <input checked="" type="checkbox"/> During Transport	1	C	E	Plant/Engineering/Signage Controls <ul style="list-style-type: none"> •Emergency Stop •Lockable battery isolator •ROPS, enclosed cabin and seatbelt •Marked lifting points •Marked tie down points •Marked tow points •Park brake •Hydrostatic braking 	Maintenance Personnel/ Operators	During operation and maintenance	1	E	H
					Procedural Controls <ul style="list-style-type: none"> • IN ADDITION TO PLANT CONTROLS - OPERATOR AND PLANT CONTROLLER MUST ENSURE THAT EFFECTIVE SITE CONTROLS ARE IN PLACE TO AVOID CRUSHING HAZARDS RELATING TO MOBILE PLANT •Daily prestart checks •Operator competency and training •Assess site risks •Correct PPE to be worn at all times •Ensure seat belt worn at all times during operation •Ensure all guards in place when operating machine •Ensure exclusion zones maintained at all times •Understand stopping and turning distances •Lock out/tag out plant when carrying out maintenance •Activate parking brake before leaving operators platform •Use chocks on rollers to prevent movement when carrying out maintenance work where there is a risk of plant moving. 	Maintenance Personnel/ Operators	During operation and maintenance			

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		I	L	R		Who	When	I	L	R	
					<ul style="list-style-type: none"> • Avoid all driving across a slope, instead drive up and down the slope • Do not exceed manufacturers recommendation for lateral tilt or gradability - see operations manual • Ensure that at least two thirds of the drum width is on a stable working base • Drive slowly when turning sharply - maintain recommended operating speeds • Do not operate roller on damp and in poor ground conditions • Ensure there are no obstacles in the path of travel • Drive machine carefully on uneven ground 						
					<p>Transport/Loading/Unloading Controls</p> <ul style="list-style-type: none"> • Ensure the ramp is fitted securely to the truck/float • Ensure angle of the ramp is not too steep • Make sure ramps are suitable for the weight of the plant • Ensure truck/float is levelled transversely for loading/Unloading. • Operator must be comfortable with all switch board controls and their applications. Know where the Emergency Stop is. • Visually inspect all controls on the switch board to ensure all controls are in line with the loading/unloading instructions in the Operations Manual. • Before loading ensure the traction control switch is on. See operating manual for more detailed information. • Comply with max allowed loads/overmass/dimension permits • Make sure plant is tied down appropriately • Ensure ramp is not contaminated by dirt or oil • Ensure articulation locking brace is engaged prior to lifting 	Transport Driver/ Operator	During loading/unloading and prior to transporting				
<p>Additional Plant Controls required (including hierarchy of controls):</p>											
<p>Cutting/ Stabbing/ Puncturing - Yes No Can anyone be cut, stabbed or punctured by coming in contact with moving plant or parts, sharp or flying objects, work pieces ejected, work pieces disintegrated or other factors not mentioned?</p>											

SECTION 1 Hazard category and examples	SECTION 2 When does this hazard exist?	Section 3 Initial Risk			SECTION 4 Controls and Comments	Section 5 Responsibilities		Section 6 Residual Risk		
		I	L	R		Who	When	I	L	R
<input checked="" type="checkbox"/> Contact with sharp parts <input type="checkbox"/> Parts or work pieces breaking/shearing <input type="checkbox"/> Work pieces ejected <input type="checkbox"/> Movement of plant or components <input checked="" type="checkbox"/> Body or body parts caught between moving components <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input checked="" type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	C	H	Plant/Engineering/Signage Controls <ul style="list-style-type: none"> • Emergency Stop • Lockable battery isolator • All fans enclosed in engine bay • Fixed guarding as required • Signage on outside of fixed/moveable guards 	Maintenance Personnel/ Operators	During operation and maintenance	3	E	M
					Procedural Controls <ul style="list-style-type: none"> • Correct PPE to be worn at all times • Lock out/tag out plant when carrying out maintenance • Activate parking brake before leaving operators platform • De-energise/ depressurise hydraulic system prior carrying out maintenance • Use chocks on rollers to prevent movement when carrying out maintenance work where there is a risk of plant moving. • Assess site risks 	Maintenance Personnel/ Operators	During operation and maintenance			
					Transport/Loading/Unloading Controls	Transport Driver/ Operator	During loading/unloading and prior to transporting			
Additional Plant Controls required (including hierarchy of controls):										
Shearing - Yes No Can anyone's body parts be cut off between two parts of the plant and a work piece or structure?										
<input checked="" type="checkbox"/> Body or body parts caught between moving components <input checked="" type="checkbox"/> Body or body parts shear when passing structure. <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input checked="" type="checkbox"/> Work around moving plant <input checked="" type="checkbox"/> During Loading/Unloading	2	C	E	Plant/Engineering/Signage Controls <ul style="list-style-type: none"> • Enclosed cabin and seatbelt • Seat 'dead man' switch • Emergency Stop • Lockable battery isolator • All belts and pulleys enclosed in engine bay • Fixed guarding • Signage on outside of fixed/moveable guards 	Maintenance Personnel/ Operators	During operation and maintenance	2	E	H

SECTION 1 Hazard category and examples	SECTION 2 When does this hazard exist?	Section 3 Initial Risk			SECTION 4 Controls and Comments	Section 5 Responsibilities		Section 6 Residual Risk		
		I	L	R		Who	When	I	L	R
	<input type="checkbox"/> During Transport				Procedural Controls <ul style="list-style-type: none"> • Ensure all body parts remain within ROPS/cabin area • Daily prestart checks • Correct PPE to be worn at all times • All guards in place during operation. • Lock out plant prior to maintenance or removing guards • Qualified and competent maintenance workers only • Site traffic management procedure • Maintain suitable exclusion zone • Operator competency • Ensure bonnet stay is engaged before working in engine bay 	Maintenance Personnel/ Operators	During operation and maintenance			
					Transport/Loading/Unloading Controls <ul style="list-style-type: none"> • Stay clear of roller and truck while winching • Ensure suitable exclusion zone 	Transport Driver/ Operator	During loading/unloading and prior to transporting			
Additional Plant Controls required (including hierarchy of controls):										
Friction - Yes No Can any part of a persons body be injured by continuous contact with moving parts?										
<input checked="" type="checkbox"/> Contact with moving components <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	C	H	Plant/Engineering/Signage Controls <ul style="list-style-type: none"> • Emergency Stop • Lockable battery isolator • All belts enclosed in engine bay • No moving components accessible from operating position • Fixed guarding as required • Signage on outside of fixed/moveable guards 	Maintenance Personnel/ Operators	During operation and maintenance	3	E	M
					Procedural Controls <ul style="list-style-type: none"> • Lock out/tag out plant when carrying out maintenance • Exclusion zone/Maintain safe clearance to workers • Correct PPE to be worn at all times • Clothing to be buttoned up and tucked in - no loose articles • Ensure all guards and covers in place when operating 	Maintenance Personnel/ Operators	During operation and maintenance			

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		I	L	R		Who	When	I	L	R
					machine • Ensure hands kept away from moving parts Transport/Loading/Unloading Controls					
Additional Plant Controls required (including hierarchy of controls):										
Electricity (Shock or burns) Contact - Yes No Can anyone be injured by electrical shock or burnt due to damaged or poorly maintained leads or switches, water near electrical equipment, working near or contact with live electrical conductors, lack of isolation procedures or the factors not mentioned?										
<input type="checkbox"/> By damaged or poorly maintained electrical cables or connections <input type="checkbox"/> Overloading of electrical circuits <input checked="" type="checkbox"/> Contact with or proximity to live electrical conductors <input type="checkbox"/> By damaged or worn control devices <input type="checkbox"/> Contact with water or condensation <input type="checkbox"/> Other (specify)	<input checked="" type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input checked="" type="checkbox"/> Work around moving plant <input checked="" type="checkbox"/> During Loading/Unloading <input checked="" type="checkbox"/> During Transport	1	C	E	Plant Controls Procedural Controls <ul style="list-style-type: none"> • PLANT CONTROLLER AND OPERATOR ARE RESPONSIBLE FOR IMPLEMENTING SAFE SYSTEMS OF WORK TO AVOID PROXIMITY WITH LIVE CONDUCTORS • Maintain clearance to over head power lines and electrical conductors as per legislative requirements • Check site and surroundings for electrical hazards prior to operation • Lock out procedures for all maintenance • De-energise systems prior to maintenance 	Maintenance Personnel/ Operators	During operation and maintenance	1	E	H

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		I	L	R		Who	When	I	L	R
					Transport/Loading/Unloading Controls <ul style="list-style-type: none"> • Check surroundings for electrical hazards prior to loading machine - look up and live • Check plant height prior to loading • Maintain clearance to overhead power lines • Consider height of plant, height of ramps and height of elevated tilt tray prior to commencing • Plan route of travel taking into account total height of load 	Transport Driver/ Operator	During loading/unloading and prior to transporting			
Additional Plant Controls required (including hierarchy of controls):										
Burns, Explosion or Fire - Yes No										
Can anyone be injured by an explosion of gas, vapours, liquids, dusts or other substances, triggered by plant operation?										
<input type="checkbox"/> By sparks, slag or hot byproducts produced by the plant <input type="checkbox"/> Pilot light incorporated in plant <input checked="" type="checkbox"/> Ignition of flammable material by the plant <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	D	M	Plant Controls <ul style="list-style-type: none"> • Flammable/Combustible fluids isolated from hot components • Fire extinguisher fitted • Combustible fluids/hot components isolated from operators cabin • Emergency exit (left and right cabin doors) 	Maintenance Personnel/ Operators	During operation and maintenance	2	E	L
					Procedural Controls <ul style="list-style-type: none"> • Ensure both cabin doors are unlocked prior to operating • Daily prestart checks • Regular/scheduled maintenance as per manufacturers recommendations • Operator competency • Lockout while undertaking maintenance • Depressurise hydraulic system prior to maintenance • Keep fire/sparks away • Keep flammable goods away • Site refuelling procedure • Shut down engine prior to refuelling 	Maintenance Personnel/ Operators	During operation and maintenance			

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		I	L	R		Who	When	I	L	R
					Transport/Loading/Unloading Controls	Transport Driver/Operator	During loading/unloading and prior to transporting			
Additional Plant Controls required (including hierarchy of controls):										
Slips/ Trips/ Falls - Yes No Can anyone using the plant or in the vicinity of the plant, slip, trip or fall due to the working environment or other factors?										
<input type="checkbox"/> Uneven or slippery work or access surfaces <input type="checkbox"/> Housekeeping issues caused by the plant <input type="checkbox"/> Lack of safe access systems and handrails <input type="checkbox"/> Lack of guardrails to prevent access to/falls into hazardous areas of the plant <input type="checkbox"/> Insufficient structural strength of access system/platform <input checked="" type="checkbox"/> Other (please specify) - Poor housekeeping	<input checked="" type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input type="checkbox"/> Work around moving plant <input checked="" type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	C	H	Plant Controls <ul style="list-style-type: none"> • Access system compliant with AS3868 	Maintenance Personnel/Operators	During operation and maintenance	3	E	M
					Procedural Controls <ul style="list-style-type: none"> • Ensure plant and steps/walkways are clean • Pre-start checks • Regular maintenance and repairs • Maintain 3 points of contact at all times while climbing • Face steps/ladders when climbing • Use plant access steps/handrails provided • Do not jump from machine • Do not stand on bonnet or drums • Wear appropriate protective footwear 	Maintenance Personnel/Operators	During operation and maintenance			
					Transport/Loading/Unloading Controls <ul style="list-style-type: none"> • Ensure plant and steps/walkways are clean • Maintain 3 points of contact at all times while climbing • Face steps/ladders when climbing • Use plant access steps/handrails provided • Do not jump from machine • Use grip painted walkways on the truck deck • Wear appropriate protective footwear • Exclusion zone while loading/unloading as required • Do not load/unload on roadway unless traffic controls are in 	Transport Driver/Operator	During loading/unloading and prior to transporting			

SECTION 1 Hazard category and examples	SECTION 2 When does this hazard exist?	Section 3 Initial Risk			SECTION 4 Controls and Comments	Section 5 Responsibilities		Section 6 Residual Risk		
		I	L	R		Who	When	I	L	R
					place					
Additional Plant Controls required (including hierarchy of controls):										
High Pressure Fluid - Yes No Can anyone come into contact with fluids under high pressure, due to failure or misuse of the plant?										
<input checked="" type="checkbox"/> Due to a component failure <input checked="" type="checkbox"/> Due to expected wear and tear <input checked="" type="checkbox"/> Due to misuse or incorrect operation <input type="checkbox"/> Stored pressure or incorrect isolation/inability to isolate systems <input type="checkbox"/> Release of pressure caused by shut down/isolation <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input checked="" type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	D	M	Plant Controls <ul style="list-style-type: none"> • Lockable battery isolator • Emergency stop • Hydraulic lines isolated from operators cabin • Hydraulic line to AS 3791 • Hydraulic lines protected from snagging/mechanical damage by location and guarding Procedural Controls <ul style="list-style-type: none"> • Daily pre-start checks - check condition of hydraulic lines • Scheduled maintenance program as per manufacturers recommendations • Lock out/Tag out procedure for all maintenance • Isolate prior to working on hydraulic system • Wear appropriate PPE for task Transport/Loading/Unloading Controls	Maintenance Personnel/ Operators	During operation and maintenance	5	D	L
Additional Plant Controls required (including hierarchy of controls):										
Working environment and ergonomics - Yes No Can anyone be injured due to seating design, repetitive body movement or posture, excessive effort, poor workplace or plant design causing mental or physical stress, lack of consideration for human behaviour, poor lighting or others factors not mentioned?										
<input type="checkbox"/> Inadequate lighting	<input type="checkbox"/> During normal operation	4	B	H	Plant Controls	Maintenance Personnel/	During operation and	4	D	L

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		I	L	R		Who	When	I	L	R
of operators station <input checked="" type="checkbox"/> Glare from artificial or natural light <input type="checkbox"/> Controls not marked/clearly labelled <input type="checkbox"/> Inconsistent function of similar controls <input type="checkbox"/> Size, height or layout not suitable <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> During routine maintenance <input type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport				<ul style="list-style-type: none"> ROPS and FOPS 	Operators	maintenance			
					Operator/Procedural Controls <ul style="list-style-type: none"> Follow appropriate manual handling and ergonomic techniques Use appropriate access equipment and manual aids for servicing Use appropriate tools for servicing Major service to be performed in workshop environment Hearing protection must be worn by operator and bystanders 	Maintenance Personnel/ Operators	During operation and maintenance			
					Transport/Loading/Unloading Controls <ul style="list-style-type: none"> Follow appropriate manual handling techniques 	Transport Driver/ Operator	During loading/unloading and prior to transporting			
Additional Plant Controls required (including hierarchy of controls):										
Other Hazards – Yes No Can anyone be injured or suffer ill health from exposure to:										
<input type="checkbox"/> Chemicals <input type="checkbox"/> Toxic Gases <input checked="" type="checkbox"/> Vapours <input checked="" type="checkbox"/> Fumes <input type="checkbox"/> Other (please specify)	<input checked="" type="checkbox"/> During normal operation <input checked="" type="checkbox"/> During routine maintenance <input checked="" type="checkbox"/> Work around moving plant <input checked="" type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	2	C	E	Plant Controls <ul style="list-style-type: none"> 	Maintenance Personnel/ Operators	During operation and maintenance	4	D	L
					Operator/Procedural Controls <ul style="list-style-type: none"> Never operate in an enclosed/confined space without appropriate ventilation 	Maintenance Personnel/ Operators	During operation and maintenance			
					Transport/Loading/Unloading Controls <ul style="list-style-type: none"> Never operate in an enclosed/confined space without appropriate ventilation 	Transport Driver/ Operator	During loading/unloading and prior to transporting			

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		I	L	R		Who	When	I	L	R
Additional Plant Controls required (including hierarchy of controls):										
Environmental Aspects and Impacts - Yes No Can the physical environment be harmed or damaged due to the plant systems or substances?										
<input checked="" type="checkbox"/> Does the plant produce waste or by-products that require treatment <input type="checkbox"/> Does the plant produce registered waste products <input checked="" type="checkbox"/> Operation causes nuisance, eg noise, dust, vibration etc	<input checked="" type="checkbox"/> During normal operation <input type="checkbox"/> During routine maintenance <input type="checkbox"/> Work around moving plant <input type="checkbox"/> During Loading/Unloading <input type="checkbox"/> During Transport	3	C	H	Environmental controls <ul style="list-style-type: none"> • All used fluids to be collected and returned to workshop where they will be disposed of in accordance with local legislation • Used filters to be returned to workshop and disposed of by waste management contractor • No service work to be completed within 15 meters of a water course • Absorbent matting and drip trays to be used where environmental hazard exists • Hearing Protection Decals fitted 	Maintenance Personnel/ Operators	During operation and maintenance	4	D	L
					Maintenance Personnel/ Operators	During operation and maintenance				
					Transport Driver/ Operator	During loading/unloading and prior to transporting				
Additional Plant Controls required (including hierarchy of controls):										

		Likelihood ('L' in risk column)				
		A	B	C	D	E
Impact ('I' in risk column)		Almost Certain	Likely	Moderate	Unlikely	Rare
		1 – Catastrophic	(Multiple fatalities or serious injuries)	E	E	E
2 - Major	(Death/permanent disability)	E	E	E	H	H
3 - Moderate	(Medical treatment)	E	H	H	M	M
4 – Minor	(First aid)	H	H	M	L	L
5 - Insignificant	(No treatment required)	H	M	L	L	L